

CLAIMS

1. A content playback apparatus comprising:

5 a segment key file selecting unit that selects one
segment key file from plural segment key files at playback
of content from a sequence key section in a recording
medium, the recording medium storing a video object which
has plural sequence key sections that are groups of
10 contents formed from plural pieces of encrypted contents
with different minute portions and the segment key files in
which a key entry that associates segment identification
information that uniquely identifies a content to be played
back among the plural contents in the sequence key section
with a segment key that is used for decrypting a content
15 corresponding to the segment identification information for
each sequence key section;

a content selecting unit that selects each content
corresponding to the segment identification information of
the key entry registered in the selected segment key file;

20 a content decrypting unit that decrypts each selected
content by a segment key corresponding to the segment
identification information; and

a playback unit that plays back each decrypted content.

25 2. The content playback apparatus according to claim 1,
wherein

the segment key file is recorded in the recording
medium in an encrypted form encrypted by a predetermined
encryption key,

30 the segment key file selecting unit further decrypts
the selected single segment key file with the encryption
key, and registers all the key entries registered in the
decrypted segment key file in a segment key table, and

the content selecting unit selects respective contents corresponding to the series of segment identification information of respective key entries in the decrypted segment key file.

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3. The content playback apparatus according to claim 2, further comprising a storage unit that stores the segment key table in which the key entries of the decrypted segment key files are stored,

10 wherein the segment key file selecting unit further registers all the key entries registered in the decrypted segment key file in the segment key table, and

the content selecting unit selects the respective contents corresponding to the series of segment
15 identification information of the key entries registered in the segment key table.

4. The content playback apparatus according to claim 1, wherein the recording medium further stores content related
20 information which includes a key pointer that indicates an address of the key entry and further includes control information for playback of respective contents of the sequence key section,

the content playback apparatus further comprises a
25 related information reading unit that reads out the content related information from the recording medium,

wherein the content selecting unit selects respective contents corresponding to the series of segment
identification information of the key entry indicated by
30 the key pointer of the content related information read out by the related information reading unit.

5. The content playback apparatus according to claim 1,

wherein

the sequence key section is recorded in the recording medium in a form of an interleaved block and each content is stored on a basis of an interleaved unit, and

5 the content selecting unit selects each content corresponding to the segment identification information of the key entry on a basis of the interleaved unit.

6. The content playback apparatus according to claim 5,
10 wherein

the content related information further includes block information which indicates whether the interleaved block is the segment key file or not, and

the content selecting unit selects respective contents
15 corresponding to the series of segment identification information only when the block information in the content related information read out by the related information reading unit indicates that the interleaved block is the segment key file.

20 7. The content playback apparatus according to claim 5, wherein the content selecting unit further disables an angle function when the block information in the content related information read out by the related information
25 reading unit indicates that the interleaved block is the segment key file.

8. The content playback apparatus according to claim 7,
wherein the content selecting unit proceeds to a process
30 relating with the angle function when the block information in the content related information read out by the related information reading unit indicates that the interleaved block is not the segment key file.

9. The content playback apparatus according to claim 5,
wherein each interleaved unit in the sequence key section
stores address information alone of the interleaved unit
5 that stores content to be processed next, and

the content selecting unit selects and plays back the
interleaved unit to be processed next designated by the
address information when the content playback unit
completes the playback of the content.

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10. The content playback apparatus according to claim 9,
wherein, each interleaved unit in the sequence key section
stores the address information corresponding to the segment
identification information of itself, and stores a value
15 indicating invalidity corresponding to the segment
identification information other than the segment
identification information of itself.

11. The content playback apparatus according to claim 10,
20 wherein the content selecting unit selects and plays back
the interleaved unit to be processed next by looking up the
address information based on the segment identification
information of itself when the content playback unit
completes the playback of the content.

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12. The content playback apparatus according to claim 4,
wherein the sequence key section is provided in the video
object which corresponds to a Standard content including
video content, audio content, and sub picture content.

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13. The content playback apparatus according to claim 12,
wherein the related information reading unit reads out
control information for playback stored in a cell in the

recording medium as the content related information.

14. The content playback apparatus according to claim 4,
wherein the sequence key section is further provided in the
5 video object which corresponds to an Advanced content
including content other than video content, audio content,
and sub picture content.

15. The content playback apparatus according to claim 14,
10 wherein the related information reading unit further reads
out control information for playback stored in a TMAP in
the recording medium as the content related information.

16. A method of content playback comprising:
15 selecting one segment key file from plural segment key
files at playback of content from a sequence key section in
a recording medium, the recording medium storing a video
object which has plural sequence key sections that are
groups of contents formed from plural pieces of encrypted
20 contents with different minute portions and the segment key
files in which a key entry that associates segment
identification information that uniquely identifies a
content to be played back among the plural contents in the
sequence key section with a segment key that is used for
25 decrypting a content corresponding to the segment
identification information for each sequence key section;
selecting each content corresponding to the segment
identification information of the key entry registered in
the selected segment key file;
30 decrypting each selected content by a segment key
corresponding to the segment identification information;
and

playing back each decrypted content.

17. A computer program product having a computer readable medium including programmed instructions for content playback, wherein the instructions, when executed by a computer, cause the computer to perform:

- 5 selecting one segment key file from plural segment key files at playback of content from a sequence key section in a recording medium, the recording medium storing a video object which has plural sequence key sections that are
- 10 groups of contents formed from plural pieces of encrypted contents with different minute portions and the segment key files in which a key entry that associates segment
- 15 identification information that uniquely identifies a content to be played back among the plural contents in the sequence key section with a segment key that is used for
- 20 decrypting a content corresponding to the segment identification information for each sequence key section;
- selecting each content corresponding to the segment identification information of the key entry registered in
- the selected segment key file;
- decrypting each selected content by a segment key corresponding to the segment identification information;
- and
- playing back each decrypted content.